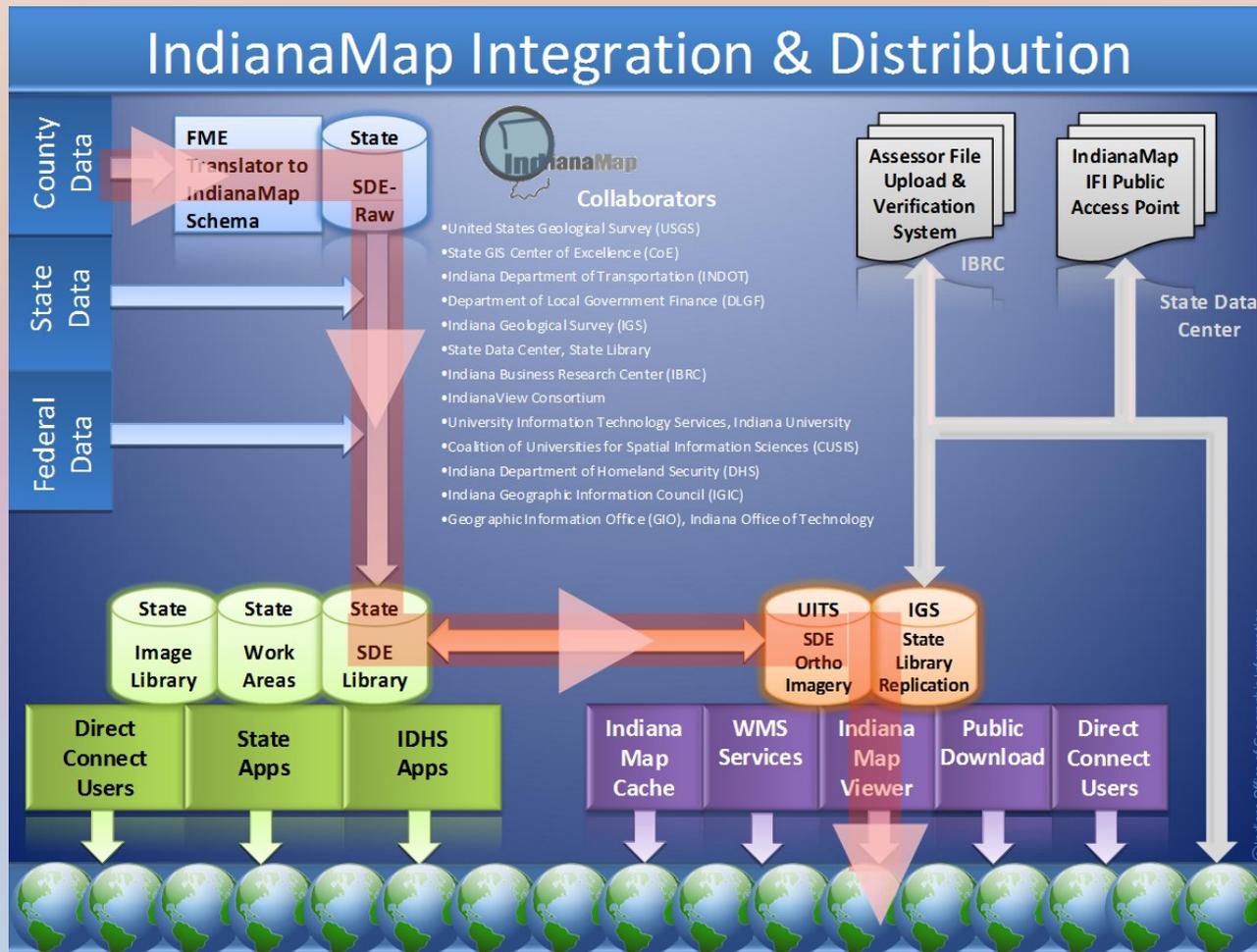


2009 CAP - Category 7: Demonstrating the IndianaMap Data Sharing Initiative with four Key Framework Data Layers



2009 CAP - Category 7:

Demonstrating the IndianaMap Data Sharing Initiative with four Key Framework Data Layers

IGIC will develop and demonstrate the data sharing partnerships and the data development and maintenance procedures to feed four authoritative local data layers (road centerlines, jurisdictional boundaries, point addresses, and parcel boundaries) into the IndianaMap, The National Map, and Geospatial One-Stop to advance the NSDI.

Project Team

- The Indiana Geographic Information Council (IGIC) is the lead organization for the project.

[Phil Worrall, Executive Director]

- The Indiana Office of Technology (IOT)*

[Jim Sparks, Indiana Geographic Information Officer]

- Indiana Geological Survey (IGS)

[Rick Hill, Chief Information Officer and IT Section Head]

**IOT will serve as the POC for all State Agency services and resources. GIS technical resources from various state agencies will be utilized to perform the work.*

Dear Commissioner;

This letter is a formal invitation for your county to join together with us to build a seamless statewide map for the benefit of all Indiana citizens.



STATE OF INDIANA

Mitchell E. Daniels Jr., Governor

June 14, 2008

GIS Data to build a Statewide Map

This letter is a formal invitation for your county to join together with us to build a seamless statewide map for the benefit of all Indiana citizens.

The use of geographic information systems (GIS) to assist decision making is expanding in all levels of government. As you may know, the State and others have developed a great deal of GIS data, which is available for use by your county. Some of these data providers are:

- Indiana Geological Survey (<http://igs.indiana.edu>)
- University Information Technology Services at Indiana University (<http://www.indiana.edu/~dms>)
- State Data Center at the Indiana State Library (<http://library.in.gov>)
- Indiana Business Research Center (<http://www.ibrc.indiana.edu>)
- Indiana Spatial Data Portal at Indiana University (http://www.indiana.edu/~gis_data/index.html)
- Indiana Geographic Information Council (<http://www.isic.org>)
- Indiana's GIS Inventory (<http://in.gisinventory.net>)

In addition, over 40 Indiana counties and more than a dozen Indiana cities and towns make their GIS data available for online viewing and/or download. Because of these efforts, it is now possible to realize the vision of a seamless statewide map, which ties together the most current and accurate data available throughout the state. This resource, the [IndianaMap](#), will facilitate a wide range of local, regional, and statewide activities to support our most pressing needs, including:

- economic development
- property tax assessment
- E-911 emergency response
- Homeland Security infrastructure protection and disaster recovery
- FEMA flood map modernization
- water quality management
- parolee and offender management
- transportation planning

In order to increase the benefit of the IndianaMap, the Indiana Geographic Information Office, the Department of Local Government Finance (DLGF), the Indiana Department of Homeland Security (IDHS) and the Indiana Geographic Information Council are requesting your support. In particular, we are asking that you make available to the IndianaMap a minimum subset of four GIS data "layers": land parcels, point addresses, local roads, and jurisdiction boundaries, if available. These data sets are, appropriately, created and maintained by counties but have great value to many other organizations around the state and beyond, especially when integrated into a seamless statewide map.

Data Layers Requested

- Land Parcels
- Point Addresses
- Local Road Centerlines
- Local Boundaries

OGC Compliant
Web Feature Services (WFS)

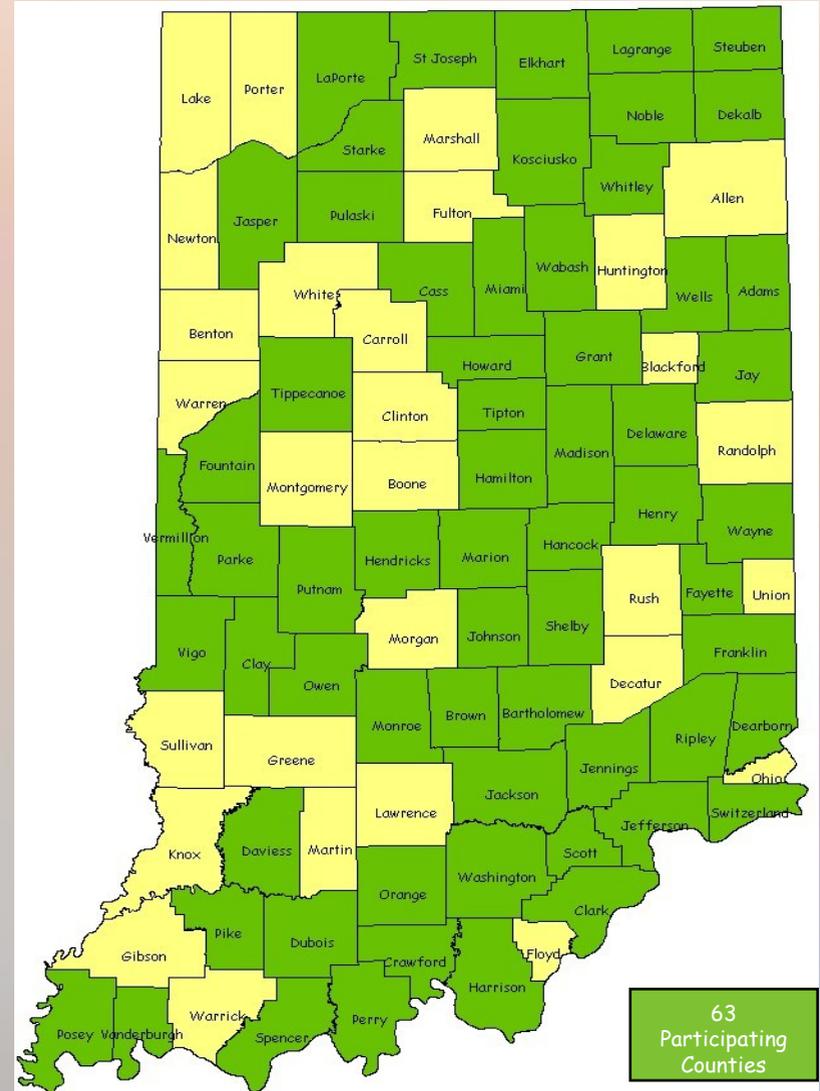
IDHS Grant
\$14,894



IndianaMap Data Sharing Initiative

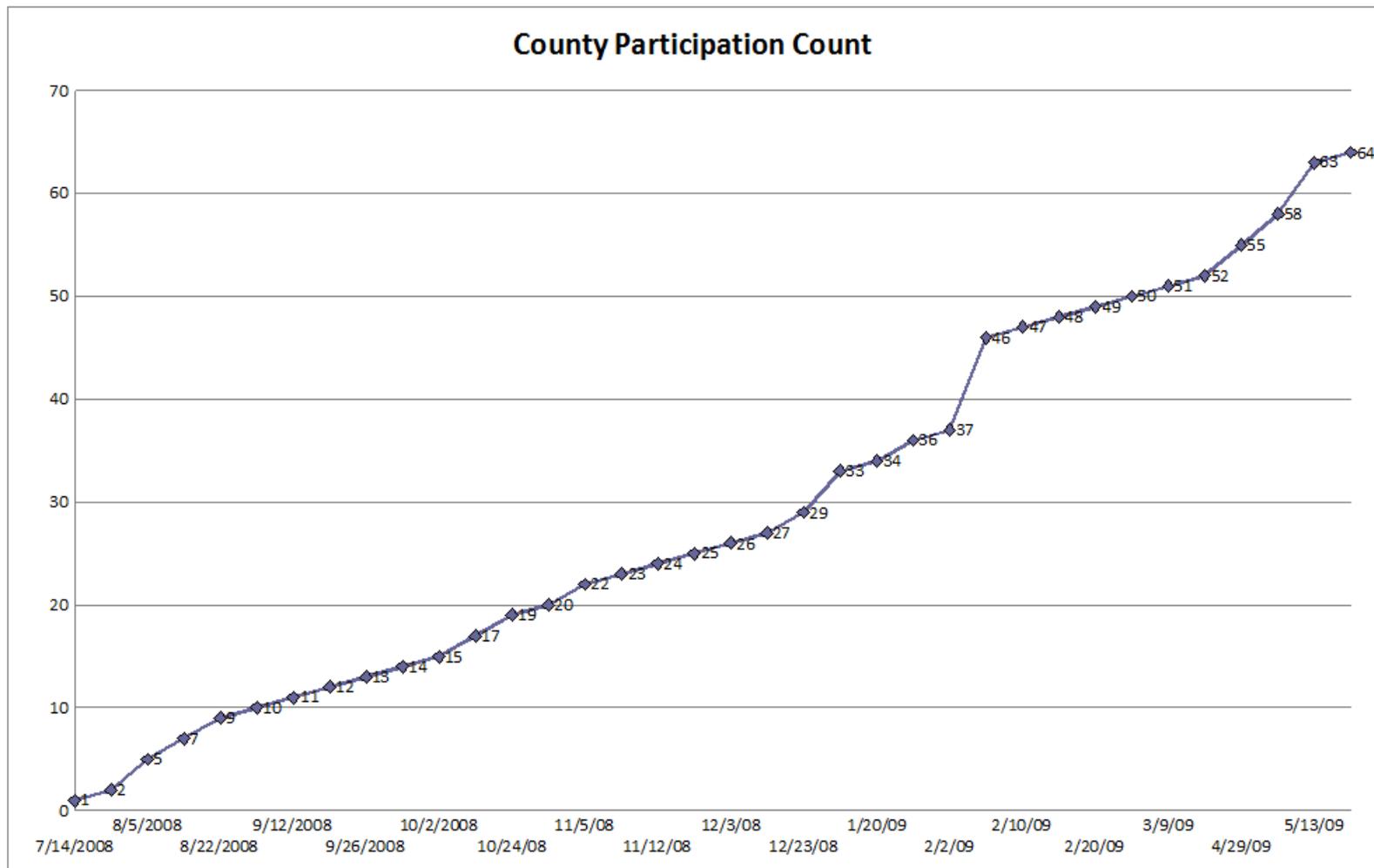
Participating Counties as of 5/13/2009

Adams	Henry	Posey
Bartholomew	Howard	Pulaski
Brown	Jackson	Putnam
Cass	Jasper	Ripley
Clark	Jay	Scott
Clay	Jefferson	Shelby
Crawford	Jennings	Spencer
Daviess	Johnson	St. Joseph
Dearborn	Kosciusko	Starke
DeKalb	Lagrange	Steuben
Delaware	LaPorte	Switzerland
Dubois	Madison	Tippecanoe
Elkhart	Marion	Tipton
Fayette	Miami	Vanderburgh
Fountain	Monroe	Vermillion
Franklin	Noble	Vigo
Grant	Orange	Wabash
Hamilton	Owen	Washington
Hancock	Parke	Wayne
Harrison	Perry	Wells
Hendricks	Pike	Whitley



IndianaMap Data Sharing Initiative

Date	Participation Count
7/14/2008	1
7/28/2008	2
8/5/2008	5
8/18/2008	7
8/22/2008	9
8/28/2008	10
9/12/2008	11
9/16/2008	12
9/26/2008	13
9/29/2008	14
10/2/2008	15
10/5/2008	17
10/24/08	19
10/27/08	20
11/5/08	22
11/6/08	23
11/12/08	24
12/1/08	25
12/3/08	26
12/9/08	27
12/23/08	29
1/5/09	33
1/20/09	34
1/27/09	36
2/2/09	37
2/9/09	46
2/10/09	47
2/11/09	48
2/20/09	49
3/6/09	50
3/9/09	51
3/13/09	52
4/29/09	55
5/5/09	58
5/13/09	63
5/15/09	64



64 Counties currently on-board representing over 72% of Indiana's population! Estimate to have 85 of 92 by this summer.

The IndianaMap Viewer

Hosted by the Indiana Geological Survey (IGS)

<http://www.indianamap.org>



IndianaMap
Partners

Map Search/Query Draw Map Output Download Help

Active Layer: Counties

Contours, Imagery, & Other

- m d r Aerial Photos - 2007 (NAIP)
- m d Aerial Photos - 2007 (Central
- m d r Aerial Photos - 2006 (NAIP)
- m d S r Aerial Photos - 2005
- m d r Aerial Photos (Infrared) -
- m d r Aerial Photos - 2005 (NAIP)
- m d r Aerial Photos - 2004 (NAIP)
- m d r Aerial Photos - 2003 (NAIP)
- m d r Aerial Photos - 1998
- m d Benchmarks (NOAA)
- m d Benchmarks - GPS (NOAA)
- m d S r Elevation
- m d S r Elevation Contours
- m d S r Shaded relief
- m d r Surveyor Tie Cards
- m d r Topo map (USGS 1:24,000

DEMOGRAPHICS
INFRASTRUCTURE
ENVIRONMENT/BIOLOGY
HYDROLOGY
GEOLOGY

AutoRefresh Map

Refresh Map

Tool Mode: **Zoom In** Active Layer: **Counties**

Map Coordinates: 864495 m E, 4631242 m N (UTM Zone 16 NAD83) -- 82°36'59.3" W, 41°45'07.6" N

Transferring data from 129.79.145.7...

Scale 1: 3204062 Zoom

Resources for GIS Professionals

Framework Services

GIS professionals can access selected categories of data ("framework layers") without downloading individual data sets. This is useful for performing desktop GIS-based analyses.



Indiana Geological Survey
A research institute of Indiana University



Bookstore
Licensing
Interactive Maps
search Go

Geology GIS/Maps About Us Related Sites

Connecting to IGS Map Services using Desktop GIS Software

Desktop GIS software users may access IGS Web map services (WMS) online without downloading GIS data sets to their local systems. This is particularly useful for viewing large aerial photo data sets that may be hundreds of gigabytes in size. Follow the instructions below to load map services directly as data layers into ESRI ArcMap or other WMS-compatible GIS software applications.

Instructions for connecting to ArcIMS services from ArcMap

1. Open ArcMap, and click **Add Data**.
2. In the Add Data dialog box, from the "Look In" drop-down menu, choose **GIS Servers**.
3. Double-click **Add ArcIMS Server**.
4. Enter the URL for the server (<http://igsmap1.indiana.edu>)
5. Choose the **All Services** option, and then click OK to create a new connection to the IGS server.
6. In the Add Data dialog box, double-click the new server connection to view available map services.
7. Select one or more map services, and then click **Add** to load the map services into ArcMap.

Instructions for connecting to Web Map Services from WMS-compatible clients

From a WMS-compatible client, establish a connection to the map service of interest using this URL format:
[Server]/wmsconnector/com.esri.wms.Esrimap?ServiceName=[Map Service]

Replace [Server] and [Map Service] with information from the table below. For example, to connect to the Geodetic Control Framework service, use:
http://igsmap1.indiana.edu/wmsconnector/com.esri.wms.Esrimap?ServiceName=fw_geodetic_control

Server	Map Service	Descriptive Name	Service Description
http://igsmap1.indiana.edu	statewideMain*	IndianaMap	More than 200 statewide layers showing information about coal, environment/biology, geology, hydrology, and infrastructure/demographics
	cmisMain	Coal Mine Information System	Surface and underground coal mines, mine entrances, mine subsidence areas, and reference layers for southwestern Indiana
	IHAPIMain	Indiana Historical Aerial Photos	Historic aerial photos, aerial photos indices
	fw_boundaries_govt_units*	Framework - Government Boundaries	State, county, and municipal boundaries
	fw_cadastral*	Framework - Cadastral	Section and township lines
	fw_elevation*	Framework - Elevation	Digital elevation model, elevation contours
	fw_geodetic_control*	Framework -	Benchmarks

Resources for GIS Professionals

The screenshot shows the IndianaMap website interface. At the top, there is a navigation bar with links for NEWS, INDIANAMAP VIEWER, TUTORIALS, SUPPORT, and PARTNERS. The main content area is titled 'Reference Downloads' and contains a table with three columns: 'Data Set', 'Metadata', and 'Download'. The 'Download' column is circled in red. The table lists various GIS data sets, including benchmarks, public land survey systems, county and township boundaries, and USGS quadrangle boundaries. Each entry includes a link to the metadata and a 'Shapefile' download link with its size in KB or MB. A sidebar on the left lists other GIS download categories like Reference, Demographics, and Infrastructure.

Data Set	Metadata	Download
Benchmarks - (NOAA)	BENCHMARKS_NOAA_IN	Shapefile (808 KB)
Benchmarks - GPS (NOAA)	BENCHMARKS_GPS_NOAA_IN	Shapefile (64 KB)
Public Land Survey System -		
County Boundaries	LANDSURVEY_COUNTY_LINE_IN	Shapefile (478 KB)
County Boundaries	LANDSURVEY_COUNTY_POLY_IN	Shapefile (455 KB)
Section Boundaries - Lines	LANDSURVEY_SECTIONS_LINE_IN	Shapefile (2.8 KB)
Section Boundaries	LANDSURVEY_SECTIONS_POLY_IN	Shapefile (2.1 MB)
State Boundaries - Lines	LANDSURVEY_STATE_LINE_IN	Shapefile (138 KB)
State Boundaries	LANDSURVEY_STATE_POLY_IN	Shapefile (133 KB)
Township Boundaries - Lines	LANDSURVEY_TOWNSHIPS_LINE_IN	Shapefile (917 KB)
Township Boundaries	LANDSURVEY_TOWNSHIPS_POLY_IN	Shapefile (569 KB)
USGS Quadrangle Boundaries		
Quad. Boundaries - 24K	QUADRANGLES_24K_USGS_IN	Shapefile (51 KB)
Quad. Boundaries - 100K	QUADRANGLES_100K_USGS_IN	Shapefile (30 KB)
Quad. Boundaries - 250K	QUADRANGLES_250K_USGS_IN	Shapefile (190 KB)
1:24,000 Digital Line Graphs (DLGs) - Grouped into 1:100,000 Quadrangle Areas. Twenty-nine of 35 quads are currently available. [click here for index map]		
Contours	CONTOURS_24K_USGS_ADRIAN	Shapefile (3.6 MB)
Contours	CONTOURS_24K_USGS_BEDFORD	Shapefile (61.2 MB)
Contours	CONTOURS_24K_USGS_BLOOMINGTON	Shapefile (70 MB)
Contours	CONTOURS_24K_USGS_CHICAGO	Shapefile (2.2 MB)
Contours	CONTOURS_24K_USGS_CINCINNATI	Shapefile (16.9 MB)
Contours	CONTOURS_24K_USGS_DANVILLE	Shapefile (13.4 MB)
Contours	CONTOURS_24K_USGS_DAYTON	Shapefile (7.2 MB)
Contours	CONTOURS_24K_USGS_DEFIANCE	Shapefile (4.1 MB)
Contours	CONTOURS_24K_USGS_ELKHART	Shapefile (14.1 MB)
Contours	CONTOURS_24K_USGS_EVANSVILLE	Shapefile (9.9 MB)
Contours	CONTOURS_24K_USGS_FALMOUTH	Shapefile (9.8 MB)
Contours	CONTOURS_24K_USGS_FORTWAYNE	Shapefile (25.9 MB)
Contours	CONTOURS_24K_USGS_GREENSBURG	Shapefile (36.4 MB)
Contours	CONTOURS_24K_USGS_INDIANAPOLIS	Shapefile (30.9 MB)
Contours	CONTOURS_24K_USGS_JASPER	Shapefile (63.7 MB)
Contours	CONTOURS_24K_USGS_KANKAKEE	Shapefile (11.1 MB)
Contours	CONTOURS_24K_USGS_KROX	Shapefile (23.8 MB)
Contours	CONTOURS_24K_USGS_LAFAYETTE	Shapefile (15.1 MB)
Contours	CONTOURS_24K_USGS_LIMA	Shapefile (5.4 MB)
Contours	CONTOURS_24K_USGS_LOGANSPOUT	Shapefile (19.5 MB)
Contours	CONTOURS_24K_USGS_LOUISVILLE	Shapefile (18.9 MB)
Contours	CONTOURS_24K_USGS_MADISON	Shapefile (48.4 MB)
Contours	CONTOURS_24K_USGS_MUNCIE	Shapefile (13.8 MB)
Contours	CONTOURS_24K_USGS_NEWCASTLE	Shapefile (23.0 MB)
Contours	CONTOURS_24K_USGS_PARIS	Shapefile (23.5 MB)
Contours	CONTOURS_24K_USGS_PIQUA	Shapefile (3.6 MB)
Contours	CONTOURS_24K_USGS_PRINCETON	Shapefile (34.4 MB)
Contours	CONTOURS_24K_USGS_SOUTHBEND	Shapefile (13.0 MB)
Contours	CONTOURS_24K_USGS_TELLCITY	Shapefile (12.7 MB)

Vector &
Metadata
Downloads
from
IGS

Resources for GIS Professionals

The screenshot displays the IndianaMap Viewer web application. The main map shows a satellite view of a region in Indiana with a red bounding box. A red arrow points from this box to the 'Download Raster Data' option in the 'Active Layer' dropdown menu. A second red arrow points from the 'Download Raster Data' button to a 'Single File Download Interface' window. This window displays the 'Indiana Spatial Data Portal' and lists 21 available datasets for the selected UTM bounding coordinates. The datasets include various types of imagery and elevation data from 2005 to 2008.

IndianaMap Viewer
http://inmap.indiana.edu/viewer.htm

Map Search/Query Draw Map Output

Active Layer: Counties

Download Raster Data

STEP 1: Click in your area of interest on the map. A new window will appear. (Note: be sure all pop-up blockers are disabled.)

STEP 2: A list of all the raster data sets available for downloading will appear in the new window. You will be downloading these data from the Indiana Spatial Data Portal (ISDP) of Indiana University.

STEP 3: Browse the directory tree and click a file-name hyperlink to begin downloading data.

INDIANA UNIVERSITY
Indiana Spatial Data Portal

Spatial Datasets within the UTM bounding coordinates of:
(548643, 4328891) min by (548643, 4328891) max in meters

The following directory lists datasets for the location selected from the Single File Download Interface. Please use the expandable folder links to browse the directory tree. To begin downloading, click a file name hyperlink. All ISDP files are stored on a tape-based archival system. File transfer usually takes 1-3 minutes to begin. For help with downloading, unpacking files and other questions, please see [Frequently Asked Questions](#)

There are 21 available datasets

- + Topographic Maps (DRG) description
- + 2008 National Agriculture Imagery Program (summer) description
- + 2008 Monroe County Vector Dataset description
- + 2007 National Agriculture Imagery Program (summer) description
- + 2006 National Agriculture Imagery Program (summer) description
- + 2006 IndianaMap Reflight Natural Color (spring) description
- + 2006 IndianaMap Reflight Color Infrared (spring) description
- + 2005 National Agriculture Imagery Program (summer) description
- + 2005 IndianaMap Natural Color Orthos (spring) description
- + 2005 IndianaMap Color Infrared Photos (spring) description
- + 2005 IndianaMap Digital Elevation Model (spring) description
- + 2005 IndianaMap Digital Surface Model (spring) description
- + 2005 Bloomington Elevation Contours description

Done

Internet | Protected Mode: Off

Scale 1: 1964011

Map Coordinates: 701938 m E, 4171958 m N (UTM Zone 16 NAD83) -- 84°42'36.9" W, 37°40'22.7" N

http://inmap.indiana.edu/links.htm#

> 14TB of Raster Data Downloads from the Indiana Spatial Data Portal at University - UITS

IndianaMap Data Contributors

Indiana Department of Transportation (INDOT) – 14 layers
Indiana Department of Natural Resources (IDNR) – 9 layers
Indiana Department of Environmental Management (IDEM) – 22 layers
Indiana Geological Survey (IGS) – 63 layers
Indiana Department of Commerce – 4 layers
Indianapolis Mapping and Geographic Infrastructure System (IMAGIS) – 1 layer
Indiana Geographic Information Council (IGIC) – 3 layers
Indiana Business Research Center (IBRC) – 2 layers
Indiana Election Division – 2 layers
Indiana Utility Regulatory Commission (IURC) – 1 layer
Federal Emergency Management Agency (FEMA) – 4 layers
National Oceanic and Atmospheric Administration (NOAA) – 2 layers
National Park Service (NPS) – 2 layers
National Resource Commission (NRC) – 1 layer
U.S. Census Bureau (USCB) – 23 layers
U.S. Environmental Protection Agency (EPA) – 5 layers
U.S. Geological Survey (USGS) – 23 layers
U.S. Department of Agriculture (USDA) – 15 layers
Bureau of Transportation Statistics (BTS) – 6 layers
U.S. Fish and Wildlife Service (USFWS) – 4 layers
U.S. Forest Service (USFS) – 2 layers
Federal Communications Commission (FCC) – 1 layer
Bernardin, Lochmueller, and Associates, Inc. – 4 layers
Environmental Systems Research Incorporated (ESRI) – 1 layer
Tele Atlas – 2 layers
Indiana Counties – Parcels, Address Points, Road Centerlines, Boundaries

Key topics to be addressed in this project include:

1. Document the partnership and outreach mechanisms used (understanding and explaining current laws in the Indiana Code, developing data-sharing agreements, communicating with the county commissioners, the county/local GIS departments, GIS coordinators meeting, statewide road shows, conferences, workgroups, special presentations, etc.).
2. To support QA/QC efforts, we will develop an authoritative **GIS** digital County Boundary file to be provided [and used] by all 92 data stewards.
3. Develop Statewide Minimum Data Standard guidelines for four framework data layers based on the IndianaMap Geospatial Data Model, and State and Local Government Business and Capture Rules.

Key topics to be addressed in this project include:

4. Develop an independent QA/QC Process to evaluate the harvested Framework WFS data:
- Ability to successfully access and harvest updates through WFS
 - Adherence of the harvested data to the Minimum Data Standards
 - Completeness Assessment
 - Attribute Assessment
 - Horizontal Accuracy Assessment
 - Metadata Assessment & updates
 - Topology Assessment (Internal and with Neighboring Counties)

Key topics to be addressed in this project include:

5. Develop a process to report back to the data stewards results of the independent QA/QC of the harvested WFS data in a meaningful and usable way.

6. Develop a Problem/Resolution process to allow the data stewards to collaborate with adjoining counties on the resolution of any edge-matching or overlap issues (graphic and attributes).

7. Work with the USGS to automate the transfer of the new framework data layers in the IndianaMap into the National Map.

8. Document and present the best practices developed.